

<b>L Number</b>	<b>Hits</b>	<b>Search Text</b>	<b>DB</b>	<b>Time stamp</b>
<b>1</b>	<b>886</b>	<b>29/606.ccls.</b>	<b>USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB</b>	<b>2002/10/23 17:37</b>
<b>2</b>	<b>471</b>	<b>29/606.ccls. and coil</b>	<b>USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB</b>	<b>2002/10/23 17:37</b>
<b>3</b>	<b>2</b>	<b>29/606.ccls. and coil and core and dicing</b>	<b>USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB</b>	<b>2002/10/23 17:37</b>
<b>4</b>	<b>8</b>	<b>("4268003"   "5307557"   "5551146"   "5767759"   "5903207"   "6063321"   "6189204"   "6242995").PN.</b>	<b>USPAT</b>	<b>2002/10/23 17:38</b>
<b>5</b>	<b>20</b>	<b>("2298275"   "3196523"   "3259862"   "3323200"   "3367816"   "3609833"   "3659336"   "3670406"   "3684993"   "3689981"   "3811045"   "4516103"   "4621251"   "4696100"   "4785527"   "5191701"   "5262745"   "5351167"   "5572788"   "5692290").PN.</b>	<b>USPAT</b>	<b>2002/10/23 17:39</b>
<b>-</b>	<b>77</b>	<b>transducer and coil and core and dicing</b>	<b>USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB</b>	<b>2002/10/23 17:37</b>
<b>-</b>	<b>77</b>	<b>transducer and coil and core and dicing</b>	<b>USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB</b>	<b>2002/10/23 16:29</b>
<b>-</b>	<b>61</b>	<b>transducer and coil and insulation and dicing</b>	<b>USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB</b>	<b>2002/10/23 16:25</b>
<b>-</b>	<b>20</b>	<b>transducer and coil and insulation and dicing and 29/\$.ccls.</b>	<b>USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB</b>	<b>2002/10/23 16:26</b>
<b>-</b>	<b>13</b>	<b>transducer and coil near wound and dicing</b>	<b>USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB</b>	<b>2002/10/23 16:27</b>

-	0	20020142496.URPN.	USPAT	2002/10/23 16:28
-	0	" Coil and clamp for variable reluctance" and transducer	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/23 16:30
-	0	Coil and clamp and "variable reluctance" and transducer and 324/\$.ccis. and 336/\$.ccis.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/23 16:30
-	70	Coil and clamp and "variable reluctance" and transducer	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/23 16:38
-	35	("3416015"   "3482126"   "3492615"   "3495107"   "4351653"   "4493753"   "4551157"   "4563251"   "4661212"   "4677332"   "4693791"   "4694548"   "4698285"   "4705605"   "4726936"   "4738010"   "4744863"   "4745813"   "4784935"   "4797211"   "4801830"   "4853669"   "4872888"   "4897360"   "4990827"   "4996082"   "5013693"   "5013954"   "5054522"   "5063344"   "5113100"   "5191251"   "5216310"   "5252881"   "5331236").PN.	USPAT	2002/10/23 16:32
-	2	("5004391"   "5497147").PN.	USPAT	2002/10/23 16:34
-	8	("3543145"   "3654549"   "3756081"   "4121185"   "4350954"   "4623840"   "4667158"   "4813435").PN.	USPAT	2002/10/23 16:37
-	1	"4204544".PN.	USPAT	2002/10/23 16:38
-	12	("4375818"   "4732156"   "4794931"   "4869258"   "4899757"   "5000185"   "5176141"   "5240003"   "5271402"   "5398691"   "5507294"   "5509418").PN.	USPAT	2002/10/23 16:38
-	0	Coil and clamp and "variable reluctance" and "forming window"	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/23 16:39
-	0	Coil and clamp and "variable reluctance" and "forming opening"	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/23 16:39

-	64	Coil and "variable reluctance" and window and opening	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/23 16:41
-	4	("3165731"   "3171104"   "3619570"   "3626160").PN.	USPAT	2002/10/23 16:41
-	1	Coil and "variable reluctance" and 340/870.33.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/23 16:42
-	3	Coil and "variable reluctance" and 340/870.35.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/23 16:42
-	31	Coil and "variable reluctance" and 29/\$.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/23 16:44
-	8	Coil and "variable reluctance" and transducer and 29/\$.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/23 16:44
-	365	Coil and "variable reluctance" and transducer and (Arms et al). inv.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/23 16:48
-	2	5777467.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/23 17:15
-	2	4759120.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/10/23 17:19
-	3	("3824518"   "4236295"   "4507637").PN.	USPAT	2002/10/23 17:21
-	9	4759120.URPN.	USPAT	2002/10/23 17:21
-	12	("2722662"   "3648205"   "3824518"   "3947934"   "4035695"   "4325040"   "4759120"   "4866573"   "4980663"   "5809633"   "5867897"   "5894292").PN.	USPAT	2002/10/23 17:22
-	3	("3824518"   "4236295"   "4507637").PN.	USPAT	2002/10/23 17:23

US-PAT-NO: 6311387

DOCUMENT-IDENTIFIER: US 6311387 B1

TITLE: Method of manufacturing inductor

DATE-ISSUED: November 6, 2001

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APPL-NO: 09/ 324745

DATE FILED: June 3, 1999

COUNTRY	FOREIGN-APPL-PRIORITY-DATA:
	APPL-NO APPL-DATE
JP	10-173864 June 5, 1998

INT-CL: [ 07] H01F007/06,H01F017/06

US-CL-ISSUED: 29/602.1;29/605 ;29/608 ;29/606 ;336/192  
;336/223 ;336/175

US-CL-CURRENT: 29/602.1; 29/605 ; 29/606 ; 29/608 ; 336/175  
; 336/192 ; 336/223

FIELD-OF-SEARCH: 29/602.1; 29/592.1 ; 29/605 ; 29/606 ;  
29/608 ; 336/8.3  
; 336/96 ; 336/192 ; 336/233 ; 336/175 ; 336/172

REF-CITED:

## U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME
<u>4268003</u>	May 1981	Liautaud
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5307557	May 1994	<u>Te</u> Hsueh
29/605	N/A	N/A
<u>5551146</u>	September 1996	Kawabata et al.
29/608	<u>N/A</u>	N/A
5767759	June 1998	<u>Rouet</u>
336/174	N/A	N/A
<u>5903207</u>	May 1999	Lampe, Jr. et al.
336/192	<u>N/A</u>	N/A
6063321	May 2000	<u>Koyama</u> et al.
264/404	N/A	N/A
<u>6189204</u>	February 2001	Shikama et al.
29/608	<u>N/A</u>	N/A
6242995	June 2001	<u>Shikama</u> et al.
336/175	N/A	N/A

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY
US-CL		
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29/602.1		
1-253906	October 1989	JP
29/602.1		
5304035	November 1993	JP
29/602.1		
5299250	November 1993	JP
29/606		
684648	March 1994	JP
411354364-A	December 1999	JP
2000106315	April 2000	JP
02000106314-A	April 2000	JP

ART-UNIT: 379

PRIMARY-EXAMINER: Young; Lee

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## ABSTRACT:

A method of manufacturing a bead inductor prevents deformation of a metal coil or dislocation of the axis position of the metal coil

caused by injection pressure at the time of injecting a molten resin material from a gate. A coil is fitted onto a coil supporting pin provided on a first lower mold used for injection molding in a cavity of the mold such that the inner periphery of the coil is in close contact with the coil supporting pin. A molten, resin material is injected into the cavity. Then, the coil supporting pin and the first lower mold are removed from the molded product, and a second lower mold without a coil supporting pin is provided for replacing the first lower mold. A molten resin material is injected into the space which had been occupied by the coil supporting pin. After removing the hardened resin molded product from the mold for injection molding, the end parts of the coil are cut so as to be exposed.

20 Claims, 21 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 11